(Slip Opinion)

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BEFORE THE ENVIRONMENTAL APPEALS BOARD
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C.

In re:	)	
Hillman Power Company, L.L.C.	)	PSD Appeal Nos. 02-04, 02-05, and 02-06
PSD Permit No. 687-86G	)	

[Decided July 31, 2002]

ORDER DENYING REVIEW

Before Environmental Appeals Judges Scott C. Fulton, Edward E. Reich, and Kathie A. Stein.

HILLMAN POWER COMPANY

PSD Appeal Nos. 02-04, 02-05, and 02-06

ORDER DENYING REVIEW

Decided July 31, 2002

Syllabus

On March 13, 2002, the Michigan Department of Environmental Quality ("MDEQ"), acting under a delegation from Region V of the U.S. Environmental Protection Agency ("EPA"), issued a federal prevention of significant deterioration ("PSD") permit to Hillman Power Company, L.L.C., pursuant to Clean Air Act § 165, 42 U.S.C. § 7475. The permit approved Hillman Power's request to increase the percentage of "tire-derived fuel" ("TDF") burned at its existing wood waste/TDF-fired electric power generating facility in Hillman, Michigan. Under its currently effective PSD permit, Hillman Power is authorized to burn a maximum of 3,149 pounds of TDF per hour (approximately six percent of total fuel) in its boiler. The modified PSD permit approved a TDF firing rate of 5,000 pounds per hour (approximately nine percent of total fuel).

On April 16, 2002, the Michigan Environmental Council ("MEC"), Dr. Richard N. Olree, Jr., and Ms. Donna Baranyai filed with the Environmental Appeals Board ("Board") petitions for review of Hillman Power's modified PSD permit. MEC challenged MDEQ's analysis of hazardous air pollutant impacts on two grounds, contending that: (1) MDEQ erred by not quantifying the level of Hillman Power's dioxin emissions through actual stack testing and instead relying on AP-42 emission factors set forth in EPA guidance to estimate dioxin levels; and (2) MDEQ erred by relying on state health-based standards rather than conducting a "collateral impacts analysis" to determine whether dioxin will be adequately controlled at the modified facility. MEC also challenged MDEQ's determination that the pre-combustion and in-situ controls, which essentially consist of the wood/TDF fuel blend Hillman Power is authorized to burn, constitute the best available control technology ("BACT") in these circumstances. Dr. Olree, for his part, argued that the PSD permit sanctions an "unjustifiable percentage" of increased sulfur dioxide ("SO_2") emissions as compared to tons of TDF burned, and that MDEQ failed to address heavy metal fallout data he provided. Ms. Baranyai also raised concerns about MDEQ's evaluation of the data indicating the presence of heavy metals in fly ash in the local elementary school's air filters and playground soils. In addition, Ms. Baranyai contended that the modified facility will fail to comply with the permit provision prohibiting emissions that cause a public nuisance.

Held: The petitions for review of the Hillman Power PSD permit are denied. The Board finds that Petitioners made no showing of clear error or important policy matter or abuse of discretion warranting Board review of the permit.

Beginning with MEC's first argument, the Board finds that the dioxin emissions analysis for this permit was not based on AP-42 emissions factors, as MEC posited. Rather, Hillman Power canvassed a number of sources in an attempt to estimate the rate at which its modified facility might emit dioxin, including stack test data from one TDF-burning facility in California and two in Michigan, a draft EPA dioxin inventory containing average dioxin emissions for wood-fired boilers, and the AP-42 factors. From these competing sources, Hillman Power selected the draft EPA dioxin inventory emission rate, the most conservative rate (i.e., the one that would anticipate the highest potential dioxin emission rate from the Hillman facility), as the one upon which to base its analysis of anticipated dioxin emissions. Within this contextual framework, MDEQ found Hillman Power's dioxin analysis to be a legitimate and conservative method of estimating emissions. MEC failed to identify any PSD program requirement that stack tests be conducted under such circumstances to assess potential levels of air toxics emissions.

With regard to the second component of MEC's air toxics argument, the Board finds that Hillman Power did, in fact, engage in a collateral environmental impacts analysis for non-PSD pollutants -- such as dioxin and other air toxics -- as part of its review of various SO_2 control technologies. Hillman Power did not quantify estimated dioxin emissions from each of the competing SO_2 technologies for comparison purposes, but, rather, conducted a risk assessment that indicated dioxin emissions from increased TDF firing at Hillman Power will constitute less than ten percent of Michigan's "Initial Risk Screening Level" (a health-based standard) for dioxin. Again, MDEQ reviewed Hillman Power's analysis and found the company's approach of examining estimated air toxics emissions in relation to the state health-based standards to be a reasonable way to evaluate air toxic impacts. Citing EPA guidance that stresses the flexibility permitting agencies have in determining means by which to factor air toxics into the BACT determination, the Board finds no clear error or other grounds to grant review of MDEQ's analysis in this regard.

In its third argument, MEC pointed out that the increase in SO_2 emissions as a function of pounds of TDF burned occurs in a non-linear manner. MEC observed that at 896 pounds of TDF burned per hour, SO_2 emissions are zero; at 3,149 pounds TDF burned per hour, SO_2 emissions are 11.5 pounds per hour; and at 5,000 pounds TDF burned per hour, SO_2 emissions jump to 50 pounds per hour. Because the fuel blend burned in Hillman Power's boiler serves as the means by which SO_2 is controlled, MEC argued that a TDF burn rate above 3,149 pounds per hour does not constitute BACT. The Board declines review on this ground, however, noting that MEC did not challenge MDEQ's determination that economic considerations specific to Hillman Power made post-combustion controls economically infeasible.

With respect to Dr. Olree's arguments, the Board explains that the PSD program does not prohibit all increases in air pollution. Rather, as designed by Congress and implemented by EPA, the PSD program represents an effort to balance economic growth with environmental concerns. In this regard, the PSD regulations specify that emissions from a proposed source may not cause or contribute to a violation of either the national ambient air quality standards or applicable PSD air quality increments. MDEQ's analysis indicates that Hillman Power's increased emissions will not do either of these things, and Dr. Olree failed to identify any clear error or other reason for the Board to grant review of this finding.

On the issue of heavy metals in school air filters and playground soils raised by Dr. Olree and Ms. Baranyai, the Board finds that MDEQ did consider the impacts that heavy metals emissions from the power plant would have on human health -- including children's health -- and the environment in the Hillman area. Petitioners failed to identify any clear error in MDEQ's treatment of these matters. Finally, with respect to the state nuisance provision in the PSD permit, this state-specific issue is not subject to regulation under the federal PSD program.

Before Environmental Appeals Judges Scott C. Fulton, Edward E. Reich, Kathie A. Stein.

Opinion of the Board by Judge Fulton:

On March 13, 2002, the Michigan Department of Environmental Quality ("MDEQ" or "Department") issued a federal prevention of significant deterioration ("PSD") permit to Hillman Power Company, L.L.C. ("Hillman Power"), pursuant to Clean Air Act § 165, 42 U.S.C. § 7475. The permit authorizes Hillman Power to burn a higher percentage of "tire-derived fuel," or "TDF," at its existing wood waste/TDF-fired electric power generating facility in Hillman, Michigan, than it currently does. MDEQ is authorized to make PSD permitting decisions for new and modified stationary sources of air pollution in the State of Michigan pursuant to a delegation agreement with Region V of the U.S. Environmental Protection Agency ("EPA" or "Agency"). *See* 40 C.F.R. § 52.21(u); 45 Fed. Reg. 8348 (Feb. 7, 1980). Because MDEQ acts as EPA's delegate under the PSD program, the Department's PSD permits are considered EPA-issued permits, and appeals of the permit decisions are heard by the Environmental Appeals Board ("Board") pursuant to 40 C.F.R. § 124.19. *See In re Tondu Energy Co.*, PSD Appeal Nos. 00-05 & 00-07, slip op. at 3 n.1 (EAB Mar. 28, 2001), 9

E.A.D. ___; *In re Steel Dynamics, Inc.*, PSD Appeal Nos. 99-04 & -05, slip op. at 5-6 (EAB June 22, 2000), 9 E.A.D. ___.

In this case, three petitioners -- the Michigan Environmental Council ("MEC"), Dr. Richard N. Olree, Jr., and Ms. Donna Baranyai -- filed appeals of MDEQ's permit decision for Hillman Power, requesting on a number of grounds that the permit be remanded to the Department for further consideration. For the reasons set forth below, the petitions for review are denied.

I. *BACKGROUND*

A. *Statutory and Regulatory Background*

Congress enacted the PSD provisions of the Clean Air Act ("CAA" or "Act") in 1977 for the purpose of, among other things, "insur[ing] that economic growth will occur in a manner consistent with the preservation of existing clean air resources." CAA § 160(3), 42 U.S.C. § 7470(3). To that end, parties must obtain preconstruction approval (i.e., PSD permits) to build new major stationary sources, or to make major modifications to existing sources, in areas of the country deemed to be in "attainment" or "unclassifiable" with respect to federal air quality standards called "national ambient air quality standards" ("NAAQS"). *See* CAA §§ 107, 160-169B, 42 U.S.C. §§ 7407, 7470-7492.

NAAQS are established on a pollutant-by-pollutant basis and are currently in effect for six air contaminants: sulfur oxides (measured as sulfur dioxide ("SO_2")), particulate matter ("PM"), carbon monoxide ("CO"), ozone, nitrogen dioxide ("NO_2"), and lead. 40 C.F.R. § 50.4-.12. In areas deemed to be in "attainment" for any of these pollutants, air quality meets or is cleaner than the NAAQS for that pollutant. CAA § 107(d)(1)(A)(i), 42 U.S.C. § 7407(d)(1)(A)(i); *In re Maui Elec. Co.*, 8 E.A.D. 1, 4 (EAB 1998). In "unclassifiable" areas, air quality cannot be classified on the basis of available information as meeting or not meeting

the NAAQS.[1] CAA § 107(d)(1)(A)(iii), 42 U.S.C. § 7407(d)(1)(A)(iii). Notably, the Hillman Power facility is situated in Montmorency County, Michigan, which is an area designated as attainment or unclassifiable for NO_2, CO, SO_2, ozone, and PM. *See* 40 C.F.R. § 81.323.

Applicants for PSD permits must demonstrate, through analyses of the anticipated air quality impacts associated with their proposed facilities, that their facilities' emissions will not cause or contribute to an exceedance of any applicable NAAQS or air quality "increment." CAA § 165(a)(3), 42 U.S.C. § 7475(a)(3); 40 C.F.R. § 52.21(k)-(m). Air quality increments represent the maximum allowable increase in a particular pollutant's concentration that may occur above a baseline ambient air concentration for that pollutant. *See* 40 C.F.R. § 52.21(c) (increments for six regulated air pollutants). In addition, applicants for PSD permits must employ the "best available control technology," or "BACT," to minimize emissions of pollutants that may be produced by the new or modified source in amounts greater than applicable levels of significance established by the PSD regulations.[2] CAA § 165(a)(4), 42 U.S.C. § 7475(a)(4); 40 C.F.R. § 52.21(j)(2).

The BACT requirement is defined in the CAA as follows:

> [BACT] means an emissions limitation based on the maximum degree of reduction of each pollutant subject to regulation under [the Act] emitted from or which results from any major emitting facility, which the permitting authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such facility through application of production processes or

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[1]Areas may also be designated as "nonattainment," meaning that the concentration of a pollutant in the ambient air exceeds the NAAQS for that pollutant. CAA § 107(d)(1)(A)(ii), 42 U.S.C. § 7407(d)(1)(A)(ii). The PSD program is not applicable, however, in nonattainment areas. *See* CAA § 161, 42 U.S.C. § 7471.

[2]The level of significance for SO_2 is, for example, 40 tons per year ("tpy"), and the level for sulfuric acid mist ("H_2SO_4") is 7 tpy. 40 C.F.R. § 52.21(b)(23).

> available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant.

CAA § 169(3), 42 U.S.C. § 7479(3); *accord* 40 C.F.R. § 52.21(b)(12) (regulatory definition of BACT). As the Board has noted on prior occasions, "[t]he requirements of preventing violations of the NAAQS and the applicable PSD increments, and the required use of BACT to minimize emissions of air pollutants, are the core of the PSD regulations." *In re Encogen Cogeneration Facility*, 8 E.A.D. 244, 247 (EAB 1999); *see also In re Haw. Elec. Light Co.*, 8 E.A.D. 66, 73 (EAB 1998); U.S. EPA, Office of Air Quality Planning & Standards, *New Source Review Workshop Manual* 5 (draft Oct. 1990) ("NSR Manual").[3]

The NSR Manual sets forth a "top-down" process for determining BACT for a particular regulated pollutant. The process includes five steps: (1) identifying all available control options for a targeted pollutant; (2) analyzing the control options' technical feasibility; (3) ranking feasible options in order of effectiveness; (4) evaluating their energy, environmental, and economic impacts; and (5) selecting as BACT a pollutant emission limit achievable by the most effective control option not eliminated in a preceding step. NSR Manual at B.5-.9; *see In re Knauf Fiber Glass, GmbH*, 8 E.A.D. 121, 129-31 (EAB 1999) (expounding on steps in top-down analysis); *In re Haw. Elec. Light Co.*, 8 E.A.D. 66, 84 (EAB 1998) (same).

B. *Factual and Procedural Background*

Hillman Power owns and operates an eighteen-megawatt electrical power generating facility in Hillman, Michigan. The facility consists of a stoker boiler with a maximum heat input rating of

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[3]In 1990, EPA issued draft guidance for permitting authorities to use in, among other things, analyzing PSD requirements. *See generally* NSR Manual. Although it is not accorded the same weight as a binding Agency regulation, the NSR Manual has been considered by this Board to be a statement of the Agency's thinking on certain PSD issues. *See*, *e.g.*, *In re Tondu Energy Co.*, PSD Appeal Nos. 00-05 & 00-07, slip op. at 13 n.13 (EAB Mar. 28, 2001), 9 E.A.D. ___.

approximately 300 MMBtu/hr, and electricity is generated by the steam produced as a result of burning fuel in the boiler. The Hillman power plant originally began operating in 1988, at which time its sole fuel source was wood. Later, Hillman Power obtained permission to fire a combination of wood and TDF in its boiler. The currently permitted TDF feedrate is approximately six percent by weight of the fuel fired in the boiler, which is equivalent to 3,149 pounds per hour or 37 tons per day.

In March 1999, Hillman Power applied for a permit to increase the rate of TDF used as a supplementary fuel to a maximum of 6,250 pounds per hour, or 75 tons per day. MDEQ denied this permit application on March 28, 2001, on various technical grounds. In brief, the Department determined that Hillman Power had: (1) performed inadequate BACT analyses for SO_2 and PM emissions from the modified facility; (2) failed to analyze the modified facility's impacts to visibility, soils, and vegetation; (3) failed to consider the ability of various pollution control technologies to control hazardous air pollutants; (4) neglected to compile sufficient data on potential emissions of polychlorinated dibenzodioxins and furans and their associated health and environmental impacts; and (5) collected insufficient information on the quantity and composition of emissions as related to odors and particulate fallout. *See* Response of MDEQ to the Petitions of MEC, Dr. Richard N. Olree, Jr., and Donna Baranyai ("MDEQ Resp.") Ex. 5, at 1-5 (MDEQ, *Question and Answer Document for Proposed Permit to Install for Hillman Power Company* 1-5 (Dec. 20, 2001)) ("Q&A Doc.").

On September 27, 2001, Hillman Power submitted a revised permit application to MDEQ, again seeking permission to increase the percentage of TDF it fires in its boiler. In this application, Hillman Power attempted to address all of the issues MDEQ had identified as deficiencies in its prior application. *See generally* MDEQ Resp. Ex. 2 (PSD Air Permit Application for Hillman Power Company, L.L.C. (Sept. 2001)) ("Permit App."). The company proposed an increase in the supplemental firing of TDF from 3,149 pounds per hour (37 tons per day) to 5,000 pounds per hour (60 tons per day, or approximately nine percent by weight of the boiler's total fuelstock), with a cap of 20,000 tons of TDF per year. *Id*. at 3, 7, 15.

Hillman Power had conducted stack testing that indicated the increase in TDF fuel would cause an increase in SO_2 emissions substantial enough to trigger BACT review. Therefore, the company engaged in a detailed BACT review process for SO_2 emissions in which it evaluated three categories of SO_2 control technologies: (1) post-combustion sulfur control systems, including wet scrubbers, dry scrubbers, and dry sorbent injection; (2) pre-combustion controls, including fuel feed limits (i.e., fuel blending) and fuel sulfur content limits; and (3) in-situ control provided by wood ash neutralization. *Id*. §§ 4.2.2, 4.2.6-.7, at 53-68, 70-95. The company determined that post-combustion controls were the most effective in terms of minimizing SO_2 emissions, but it found those controls to be inordinately expensive to install and operate at its existing, relatively small facility. Hillman Power's analysis indicated that the typical cost to control SO_2 at a variety of TDF- or coal-fired facilities is $1,000-$2,000 per ton of SO_2 removed, *id*. § 4.2.6.3, at 78-82, whereas the cost for the company to install and operate post-combustion controls at its own facility ranged from $6,000-$11,800 per ton of SO_2 removed. *Id*. § 4.2.7.2, at 92-94. Thus, Hillman Power proposed that the SO_2 BACT limit be established at the level pre-combustion and in-situ sulfur controls could achieve: namely, an SO_2 emission rate of 0.21 lb/MMBtu. *Id*. § 4.2.7.1, at 92. At the facility's design capacity of 300 MMBtu/hr, this emission rate translates to SO_2 emission limits of 62.5 pounds per hour or 250 tons per year, which Hillman Power proposed be established as permit limits for the first year of operation. In addition, Hillman Power proposed that the SO_2 limits be reduced to 50 pounds per hour or 200 tons per year after the first year, which it proposed to achieve by use of a dry sorbent fuel supplementation process (with which it will experiment for the first year) or by reducing its TDF burn rate. *Id*. § 4.2.8, at 95-96.

On December 12, 2001, MDEQ issued a draft PSD permit containing proposed terms and conditions to regulate Hillman Power's desired TDF/wood fuel modification. That same day, the Department published a notice inviting public comment on the draft permit and establishing a month-long comment period. MDEQ subsequently held a public hearing on the draft permit on January 16, 2002. The Department received a number of written and oral comments on the draft permit from interested individuals and organizations, including the

Michigan Environmental Council, Dr. Richard N. Olree, Jr., and Ms. Donna Baranyai.

After reviewing the public comments on the draft permit, the Department issued a final PSD permit for the Hillman Power modification on March 13, 2002, along with a document responding to the comments on the draft permit. *See* MDEQ Resp. Ex. 3 (Letter from Dennis M. Drake, Chief, Air Quality Division, MDEQ, to Marshall Anderson, General Manager, Hillman Power Company, L.L.C. (Mar. 13, 2002)) ("Permit"); *id*. Ex. 4 (MDEQ, Response to Comments Document for PSD Permit No. 687-86G, Hillman Power Co. (Mar. 8, 2002)) ("RTC Doc."). The permit authorizes Hillman Power's desired increase in TDF firing rate, adopts the company's proposed limits on SO_2 emissions, and establishes stack test, continuous monitoring, and reporting requirements for SO_2 and other pollutants. *See*, *e.g.*, Permit conds. 1.1e, .1g, .1i, .1k, .4-.5, .10-.11, .14, .17. In a cover letter sent with the permit documents to persons who filed attendance cards at the public hearing, MDEQ stated, "The final permit decision shall become effective on April 16, 2002, pursuant to 40 CFR § 124.15, unless a petition for a review of this decision according to procedures contained in 40 CFR § 124.19 is filed." Letter from Dennis M. Drake, Chief, Air Quality Division, MDEQ, to "Interested Party" (Mar. 13, 2002).

On April 16, 2002, MEC filed PSD Appeal No. 02-04, Dr. Olree filed PSD Appeal No. 02-05, and Ms. Baranyai filed PSD Appeal No. 02-06 with this Board. *See* Petition of the Michigan Environmental Council for Review of PSD Permit ("MEC Pet'n"); Petition of Dr. Richard N. Olree, Jr. ("Olree Pet'n"); Petition of Ms. Donna Baranyai ("Baranyai Pet'n"). At the request of the Board, MDEQ provided a response to the petitions for review, and the Board granted Hillman Power leave to file its own responses to the petitions. *See* MDEQ Resp.; Response of Hillman Power to the MEC's Petition for Review of Hillman Power's PSD Permit ("HPC's MEC Resp."); Response of Hillman Power to Richard Olree's Petition for Review of Hillman Power's PSD Permit ("HPC's Olree Resp."); Response of Hillman Power to Donna Baranyai's Petition for Review of Hillman Power's PSD Permit ("HPC's Baranyai

Resp."). The Board received the MDEQ and Hillman Power responses to the merits of the three petitions on June 14, 2002.[4]

II. *DISCUSSION*

Under the rules governing this proceeding, a PSD permit ordinarily will not be reviewed unless it is based on a clearly erroneous finding of fact or conclusion of law, or involves an important matter of policy or exercise of discretion that warrants review. *See* 40 C.F.R. § 124.19(a); 45 Fed. Reg. 33,290, 33,412 (May 19, 1980). The Board's analysis of PSD permits is guided by the preamble to section 124.19, which states that the Board's power of review "should be only sparingly exercised" and that "most permit conditions should be finally determined at the [r]egional [or state] level." 45 Fed. Reg. at 33,412; *accord In re Kawaihae Cogeneration Project*, 7 E.A.D. 107, 114 (EAB 1997). The burden of demonstrating that review is warranted rests with the petitioner, who must state his/her objections to the permit and explain why the permit issuer's previous response to those objections is clearly erroneous, an abuse of discretion, or otherwise warrants review. *In re Haw. Elec. Light Co.*, 8 E.A.D. 66, 71-72 (EAB 1998); *In re EcoEléctrica, L.P.*, 7 E.A.D. 56, 60-61 (EAB 1997).

The question presently before the Board is whether the Petitioners have made a sufficient showing that any condition or conditions of the PSD permit are clearly erroneous or involve an important matter of policy or exercise of discretion warranting review.

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[4]The Board had earlier received responses from MDEQ and Hillman Power arguing that the three petitions should be summarily dismissed as untimely. After gathering further information that revealed, among other things, that MEC had not been served the final permit decision, the Board rejected MDEQ's and Hillman Power's untimeliness arguments. *See* Order Directing Service of PSD Permit Decision on Parties That Filed Written Comments on Draft PSD Permit, Denying Motions to Dismiss, and Directing Briefing on the Merits (May 24, 2002). The Board directed MDEQ to serve the final PSD permit decision on all parties that had filed written comments on the draft permit, which MDEQ subsequently did. *See* Letter from Dennis M. Drake, Chief, Air Quality Division, MDEQ, to "Interested Party" (June 5, 2002). The Department provided the parties until July 8, 2002, to file petitions for review of the PSD permit. *Id*. The Board did not receive any further petitions by that date.

In the analysis below, we begin by examining MEC's arguments, and then we turn to Dr. Olree's and Ms. Baranyai's arguments. We find that none of the arguments rise to the level necessary to justify a grant of review of this PSD permit.

A. *Michigan Environmental Council Petition*

MEC contends that MDEQ made several errors in its BACT analysis for SO_2 emissions from the modified Hillman Power facility. In brief, MEC claims that MDEQ did not properly evaluate the capabilities of various pollutant control technologies to remove toxic compounds from Hillman Power's emissions stream, as required under the CAA and implementing regulations. MEC also argues that in selecting fuel blending and in-situ controls as SO_2 BACT, MDEQ fell short of conducting an adequate BACT analysis. We address the various components of these arguments below.

1. *Role of Air Toxics in BACT Analysis*

a. *MEC Arguments*

MEC challenges MDEQ's treatment of air toxics on two separate fronts. First, MEC contends that MDEQ erred by not quantifying the level of dioxin[5] emissions from the Hillman Power facility through stack testing. Noting that dioxin is considered by various authorities to be either a known or a likely human carcinogen, MEC states that "[s]ignificant amounts of dioxin emissions pose a concern for public health and the environment. Consequently, the MDEQ must accurately

[5]The term "dioxin" is generally used to refer to a family of more than 200 chlorinated aromatic compounds known as chlorinated dibenzo-*p*-dioxins and chlorinated dibenzofurans. Dioxin is produced as a byproduct of many industrial processes involving chlorine and heat, such as waste incineration, paper manufacturing (bleaching), and polyvinyl chloride manufacturing. The congener 2,3,7,8-tetrachlorodibenzo-*p*-dioxin ("2,3,7,8-TCDD") is the most toxic member of the dioxin family. *See generally* U.S. EPA, Office of Research & Development, *Exposure and Human Health Reassessment of 2,3,7,8-Tetrachlorodibenzo-*p*-Dioxin (TCDD) and Related Compounds* (draft final 2000), *available at* http://www.epa.gov/NCEA/pdfs/dioxin/index.htm.

determine the dioxin emission levels that are likely to come from this facility." MEC Pet'n at 7. MEC points out that MDEQ did not require Hillman Power to conduct site-specific stack tests for dioxin, but claims, instead, that the Department simply used the dioxin emission factor published in "AP-42," an EPA guidance document containing sample pollutant emission factors,[6] to estimate the facility's dioxin emissions. *Id*. at 7-8. MEC argues that "[t]he use of AP-42 factors introduces significant uncertainty into the risk assessment MDEQ conducted for dioxins," and, therefore, MDEQ failed to establish that dioxin emissions from the facility are not a matter for public concern. *Id*. at 8.

Second, MEC claims MDEQ erred by relying on state law to determine whether dioxin is adequately controlled. *Id*. at 9-10. The State of Michigan regulates toxic air contaminants (such as dioxins) and requires facilities emitting such contaminants to fulfill two major requirements: (1) a state BACT requirement for certain toxics, called "T-BACT"; and (2) an evaluation of toxic emissions' compliance with state health-based screening levels. MDEQ Resp. Ex. 1, at 5-6 (MDEQ, Hillman Power Draft PSD Permit No. 687-86G, Fact Sheet 5-6 (Dec. 12, 2001)) ("Fact Sheet"); *see* Mich. Admin. Code r. 336.1224-.1225 (2001). In this case, MDEQ determined that "[t]he ambient impact of the expected dioxin/furan emissions would be at 8.47 percent of the health-based screening level." Fact Sheet at 6; *see* Permit App. tbl. 5-3, at 108.

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[6]According to the AP-42 guidance document:

> An emission factor is a *representative value* that attempts to relate the quantity of a pollutant released to the atmosphere with an activity associated with the release of that pollutant. These factors are usually expressed as the weight of pollutant divided by a unit weight, volume, distance, or duration of the activity emitting the pollutant (e.g., kilograms of particulate emitted per megagram of coal burned). Such factors facilitate estimation of emissions from various sources of air pollution. In most cases, these factors are simply averages of all available data of acceptable quality, and are generally assumed to be representative of long-term averages for all facilities in the source category (i.e., a population average).

U.S. EPA, Office of Air Quality, Planning & Standards, I *Compilation of Air Pollutant Emission Factors AP-42: Stationary Point and Area Sources* 1 (5th ed. 1995).

From this analysis, MDEQ concluded that dioxin is not expected to be emitted in amounts sufficient to be of concern. Q&A Doc. at 3. MEC believes this state-law-based analysis "simply sidesteps" the federal PSD requirement to analyze environmental impacts of competing pollutant control options and thus constitutes clear error by MDEQ. MEC Pet'n at 9.

b. *Statutory/Regulatory Scheme*

Under the CAA, different categories of air pollutants are regulated in different ways. The two categories of pollutants relevant to this decision are: (1) "criteria pollutants," which include sulfur oxides, particulate matter, carbon monoxide, ozone, nitrogen oxides, and lead; and (2) "hazardous air pollutants" ("HAPs"), also known as "air toxics," which include a wide variety of chemical compounds, such as benzene, heptachlor, methyl bromide, styrene, and 2,3,7,8-tetrachlorodibenzo-*p*-dioxin ("2,3,7,8-TCDD"). *See* CAA § 109, 42 U.S.C. § 7409 (criteria pollutants); *id*. § 112, 42 U.S.C. § 7412 (air toxics). The CAA specifically excludes air toxics such as dioxin from regulation under the PSD program. *Id*. § 112(b)(6), 42 U.S.C. § 7412(b)(6). As a result, air toxics are sometimes referred to as "non-PSD" or even "unregulated" pollutants in the context of a PSD case.[7] *See*, *e.g.*, *In re Knauf Fiber Glass, GmbH*, 8 E.A.D. 121, 162 (EAB 1999).

Despite this statutory exclusion from PSD regulation, air toxics can play an important role in the PSD process in certain circumstances. As mentioned in Part I.A above, the CAA defines the term "BACT" as an emission limitation for a regulated (e.g., criteria) pollutant based on

[7]By statute and regulation, the term "BACT" is defined as an emission limit for a "regulated" pollutant." CAA § 169(3), 42 U.S.C. § 7479(3); 40 C.F.R. § 52.21(b)(12). Because HAPs are explicitly excluded from regulation under the PSD program, the pollutants can be considered unregulated for purposes of the PSD program, even though they are not unregulated under the CAA as a whole. *See* CAA § 112, 42 U.S.C. § 7412 (HAPs program); *see also In re Genesee Power Station*, 4 E.A.D. 832, 849 n.19 (EAB 1993) ("[a]lthough [air] toxics are not 'unregulated pollutants' in any strict sense, they are nevertheless unregulated for purposes of the PSD provisions of the Act"); *In re Robbins Res. Recovery Co.*, 2 E.A.D. 648, 653-54 (Adm'r 1991).

the use of available control technology that will result in the maximum reduction of emissions of that pollutant and that is achievable at a specific facility in light of the technology's "energy, environmental, and economic impacts and other costs." CAA § 169(3), 42 U.S.C. § 7479(3); *accord* 40 C.F.R. § 52.21(b)(12). This last clause of the BACT definition -- called the "collateral impacts" clause -- "temper[s] the stringency of the technology requirements whenever one or more of the specified 'collateral' impacts -- energy, environmental, or economic -- renders use of the most effective technology [for a particular PSD-regulated pollutant] inappropriate." *In re Columbia Gulf Transmission Co.*, 2 E.A.D. 824, 826 (Adm'r 1989) (quoted in *In re Kawaihae Cogeneration Project*, 7 E.A.D. 107, 116-17 (EAB 1997); *In re World Color Press, Inc.*, 3 E.A.D. 474, 478 (Adm'r 1990)).

In construing the environmental component of the collateral impacts clause, EPA has long taken the position that:

> The focus of a BACT determination is not always on regulated pollutants. In some circumstances, an alternative technology for controlling a regulated pollutant may be deemed BACT in preference to another technology, even though application of the former does not result in lower emissions levels [of the regulated pollutant] than the latter. This circumstance occurs, for example, whenever an analysis of the overall environmental impacts of the two technologies demonstrates that one will have lower adverse impacts than the other.

In re Spokane Reg'l Waste-to-Energy, 2 E.A.D. 809, 812 n.9 (Adm'r 1989), *aff'd sub nom. Citizens for Clean Air v. EPA*, 959 F.2d 839 (9th Cir. 1992); *accord In re Genesee Power Station*, 4 E.A.D. 832, 848-50 (EAB 1993) (where choosing one regulated pollutant control technology over another "has the incidental effect of increasing or decreasing emissions of unregulated pollutants[,]" this effect "is relevant to the selection of an appropriate control technology for regulated pollutants"); *In re N. County Res. Recovery Assocs.*, 2 E.A.D. 229, 230 (Adm'r 1986) ("if application of a control system results directly in the release (or

removal) of pollutants that are not currently regulated under the [PSD program], the net environmental impact of such emissions is eligible for consideration in making the BACT determination"). Indeed, as EPA explained in its draft NSR Manual:

> The procedure for conducting an analysis of [collateral] environmental impacts should be made based on a consideration of site-specific circumstances. In general, however, the analysis of environmental impacts starts with the identification and quantification of the solid, liquid, and gaseous discharges from the control device or devices under review. * * * [T]he analysis need only address those control alternatives with any significant or unusual environmental impacts that have the potential to affect the selection or elimination of a control alternative.

NSR Manual at B.47; *see also* MEC Pet'n Ex. 3, at 4 (Memorandum from Gerald A. Emison, Director, EPA Office of Air Quality Planning & Standards, to EPA Regional Directors (Sept. 22, 1987)) ("Emison Memo") ("[f]or PSD reviews consistent with this policy, each applicable permitting authority should initiate an evaluation of toxic air pollutants * * * [that] the proposed project would emit in amounts potentially of concern to the public").

In conducting its analysis of collateral environmental impacts, a permitting authority possesses a great deal of discretion. EPA guidance explains:

> Because of the variety of sources and pollutants that may be considered in this assessment, it is not feasible for the EPA to provide highly detailed national guidance on performing an evaluation of the toxic impacts as part of the BACT determination. Also, detailed information with respect to the type and magnitude of emissions of unregulated pollutants for many source categories is currently limited. * * * Thus, the determination of whether the pollutants would be emitted in amounts

> sufficient to be of concern is one that the permitting authority has considerable discretion in making. However, reasonable efforts should be made to address these issues.

NSR Manual at B.50-.51; *accord* Emison Memo at 3-4.

c. *Analysis*

(1) *Estimation of Dioxin Emissions: Stack Testing versus AP-42*

In this case, Hillman Power compiled a PSD permit application containing pollutant emissions estimates for its facility's proposed increase in TDF firing rate. *See* Permit App. § 2, at 10-28. The majority of emissions calculations in the application reportedly were derived from actual stack tests conducted at Hillman Power, and overseen by MDEQ, in July 1998 and January 1999. *Id*. § 2.1, at 10-11; *see id*. §§ 2.3-.4, at 14-26 & app. A (stack test results). However, as MEC alleges, Hillman Power did not conduct stack tests to determine the dioxin emissions that might be expected from an increased TDF firing rate at the facility.[8] The administrative record and the MDEQ and Hillman Power responses in this appeal are unclear regarding why stack testing was not conducted for dioxin emissions.[9]

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[8]In its Response to Comments on the draft permit, MDEQ asserted that "[t]he evaluation of toxic air contaminant emissions is based on stack test data from the Hillman Power facility." RTC Doc. at 7. We cannot tell, from the excerpted comments to which this response was given, whether MDEQ was responding to a question specifically targeting dioxin or simply addressing air toxics in general. (Notably, MEC's comments did flag dioxin issues specifically. *See* MEC Pet'n Ex. 1, at 6-9.) In any event, no stack testing was conducted at Hillman Power for this PSD permit for the specific purpose of determining potential dioxin emissions.

[9]While not altogether clear, there are some references in the administrative record that suggest the reason MDEQ did not require Hillman Power to conduct stack testing for dioxin was because the Department did not perceive TDF to be a significant source of dioxin emissions. As Hillman Power explained in its application:

(continued...)

In the absence of stack tests, Hillman Power canvassed a number of other sources in an attempt to estimate the rate at which its modified facility might emit dioxin. First, Hillman Power examined dioxin and furan stack test data collected by the California Air Resources Board for Wheelabrator Shasta Energy Company's facility in Anderson, California, which purportedly is almost identical in size to the Hillman Power facility and is equipped with the same type of fuel boilers and pollution control equipment. *Id*. § 2.1, at 10; *see id*. § 2.4.4.2, at 24 & app. D (Shasta Energy stack test results). The stack test data show dioxin/furan emissions rates for wood-firing only versus wood-and-TDF (TDF at ten percent) firing. Permit App. tbl. 2-4, at 24 & app. D. Second, Hillman Power reviewed actual dioxin/furan emissions rates from the burning of various alternate fuels, including TDF, at the Viking Energy plants in McBain, Michigan and Lincoln, Michigan. *Id*. § 2.4.4.2, at 25. Third, Hillman Power consulted a draft EPA report, titled "Inventory of Sources of Dioxin in the United States," which contains an average dioxin emissions factor for wood-fired boilers. *Id*. Finally, Hillman Power noted that "[t]he recent update to AP-42 contains emission factors for dioxins and furans for wood firing. However, there is insufficient data

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[9](...continued)

> Overall, chlorine content of TDF is very low. Appendix B contains fuel analytical data [that] indicate[] a chlorine content of 0.04% for TDF versus a wood chlorine content of 0.01%. Since TDF replaces wood at approximately a 3:1 ratio due to higher Btu content, there is little change in chlorine feed to the boiler as a result of adding TDF. Theoretical chlorine feed to the boiler is approximately 7.4 lb/hr with either wood-only firing or wood/TDF firing at 60 tons per day.
>
> Additionally, MDEQ conducted a review for two Viking energy plants (Lincoln and McBain) for alternative fuels, including TDF. This analysis indicated that chlorinated compounds [e.g., dioxins/furans] were not of concern with TDF firing * * *.

Permit App. § 2.4.4, at 23.

to calculate a 2,3,7,8-TCDD [toxic equivalent] from the emission factors provided."[10] *Id*.

From these competing sources, Hillman Power selected the draft EPA dioxin inventory emission rate, the most conservative numeric rate (i.e., the one that would yield the highest potential dioxin emission rate from the Hillman Power facility), as the one upon which to base its analysis of anticipated dioxin emissions. *Id*. That rate, though based on 100 percent wood firing rather than TDF or wood-and-TDF firing,[11] yielded an estimated "maximum" dioxin emission rate for Hillman Power's modified facility of 1.9E-09 $\mu g/m^3$, which is equivalent to 8.47 percent of 2.3E-08 $\mu g/m^3$, the figure Hillman Power lists as the Michigan "Initial Risk Screening Level" health-based standard for 2,3,7,8-TCDD. *Id*. tbl. 5-3, at 108; *see* Mich. Admin. Code r. 336.1225, .1229, .1231 (2001). MDEQ reviewed Hillman Power's dioxin analysis and found it to be a legitimate and, indeed, conservative method of estimating emissions. MDEQ stated:

> The PSD BACT analysis for this permit application consists of over 50 pages of detailed explanation of the legal, technical, environmental, and economic aspects of the various control technologies considered. Where available information was limited, as in the estimates of potential dioxin/furan emissions, Hillman Power used the data least favorable to their proposal (i.e., the highest reported emission estimate) instead of claiming that a

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[10]Under Michigan law, dioxins and furans must be evaluated as toxic equivalents of 2,3,7,8-TCDD. *See* Mich. Admin. Code r. 336.1225(6)(a) (2001) ("[a]ll polychlorinated dibenzodioxins and dibenzofurans shall be considered as [one] toxic air contaminant, expressed as an equivalent concentration of 2,3,7,8-[TCDD], based upon the relative potency of the isomers emitted from the emission unit or units"); *see also* Permit App. § 2.4.4.2, at 25.

[11]There is at least some evidence in the record that dioxin/furan emissions may stay approximately the same or possibly decrease slightly in magnitude when TDF is burned along with wood, as compared to burning wood alone. *See* Permit App. § 2.4.4.2, at 24 & app. D (stack tests from Shasta Energy Co. "indicate[] that dioxin emissions remain unchanged and furan emissions decrease when [10%] TDF is added to wood").

> lower estimate was more representative of actual conditions.

Q&A Doc. at 2; *see* Fact Sheet at 5-7.

In light of these facts, it appears that MDEQ acted responsibly in evaluating the dioxin risk posed to the public by increased TDF burning at Hillman Power. The administrative record for the permit makes clear that the dioxin analysis was not based on the AP-42 emission factors, as MEC fears. Instead, the dioxin assessment appears to be a reasoned, reasonably conservative estimate of what actual emissions might be, made after consultation of a number of relevant sources and selection of a worst-case emissions factor on which to base the dioxin emissions estimate. While it might have been preferable in certain respects for Hillman Power to have collected actual stack test data showing prospective dioxin levels, we are not aware of, and MEC has not identified for us, any PSD program requirement that stack tests be conducted in lieu of reliance on the kinds of relevant data available here to assess potential levels of air toxics emissions. Accordingly, MEC has failed to demonstrate clear error or other reason for us to grant review of MDEQ's approval of Hillman Power's dioxin emissions estimate. *See* 40 C.F.R. § 124.19(a). Review is therefore denied on this basis.[12]

(2) *State Law Health-Based Standards versus Federal Collateral Impacts Analysis*

In the second component of its air toxics argument, MEC claims MDEQ's state law-based analysis of dioxin emissions "sidesteps" the federal requirement to analyze collateral environmental impacts of competing technologies. MEC Pet'n at 9. We disagree. The record

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[12]In addition, as Hillman Power points out, the final PSD permit requires that it conduct a stack test for dioxin/furan emissions within 180 days of the effective date of the permit and verify thereby that the facility's dioxin/furan emissions do not exceed 2.3E-07μg/m^3. *See* HPC's MEC Resp. at 13-14; Permit cond. 1.11. The permit also prohibits the burning of certain treated wood types that would tend to increase dioxin emissions. Permit cond. 1.6. Any violation of these permit conditions could provide grounds for an enforcement action against the facility.

reflects that after calculating emissions estimates for all air pollutants of concern, including dioxin and other air toxics, Hillman Power did, in fact, engage in a collateral environmental impacts analysis for non-PSD pollutants as part of its review of various SO_2 control technologies. *See* Permit App. § 4.2.4, at 68-69. The company considered the effects that different flue gas temperatures, acid gases inlet concentrations, control technology placement in relation to particulate control devices, and other matters would have on the formation and control of dioxin and other air toxics. *Id*. Hillman Power concluded on the basis of this analysis that "dry scrubbers paired with particulate control equipment are the top technology for addressing non-PSD pollutants." *Id*. at 69. However, citing EPA guidance on the "considerable discretion" permitting authorities possess in incorporating non-PSD pollutant concerns into the BACT analysis, Hillman Power stated:

> Hillman believes that MDEQ's own rules regarding toxic air contaminants provide MDEQ with the basis for determining whether or not non-PSD pollutants are emitted in amounts sufficient to be of concern. Performing dispersion modeling and comparing predicted concentrations to [Michigan's health-based standards] is effectively the approach addressed in EPA's guidance. The modeling performed in this application * * * clearly demonstrates that the proposed supplemental use of TDF does not produce non-PSD pollutant emissions in amounts sufficient to be of concern. Therefore, this BACT analysis prioritizes the consideration of sulfur removal efficiency over non-PSD pollutant considerations when ranking technologies.

Id. Accordingly, Hillman Power assigned minimal weight to collateral environmental impacts in its SO_2 BACT analysis.

MDEQ reviewed and approved of Hillman Power's BACT analysis for SO_2, including the collateral environmental impacts component. *See* Fact Sheet at 3-7; RTC Doc. at 4-11; Q&A Doc. at 3-4. MDEQ found the company's approach of examining estimated air toxics emissions in relation to the state health-based standards to be a

reasonable way to evaluate impacts. Notably, the analysis did not quantify anticipated dioxin emissions from each competing SO_2 control technology and compare those emissions figures to each other; rather, the analysis simply discussed the control technologies' effects on dioxin formation/abatement in very general terms. *See* Permit App. § 4.2.4, at 68-69.

This absence of technology-by-technology comparison does not mean MDEQ clearly erred in its BACT analysis. EPA guidance specifically notes that "the permitting authority has flexibility in determining the methods by which it factors air toxics considerations into the BACT determination, subject to the obligation to make reasonable efforts to consider air toxics." NSR Manual at B.51. Moreover, "several acceptable methods, including risk assessment, exist to incorporate air toxics concerns into the BACT decision. The depth of the toxics assessment will vary with the circumstances of the particular source under review, the nature and magnitude of the toxic pollutants, and the locality." *Id*. at B.51-.52. In this case, the risk assessment indicated that dioxin emissions from increased TDF firing at Hillman Power will constitute less than ten percent of Michigan's Initial Risk Screening Level for dioxin. Under such circumstances, MDEQ had an adequate basis for its BACT decision as it pertained to dioxin. *See* NSR Manual at B.47 (collateral environmental impacts analysis "need only address those control alternatives with any significant or unusual environmental impacts that have the potential to affect the selection or elimination of a control alternative"). MEC has failed to demonstrate clear error or other reason for us to grant review of MDEQ's BACT analysis or the collateral environmental impacts analysis thereof. *See* 40 C.F.R. § 124.19(a). Review is therefore denied on this ground.

2. *Pre-combustion and In-situ Controls*

Next, MEC focuses its attention on pre-combustion and in-situ controls, the pollution control methodologies Hillman Power proposed, and MDEQ approved, as the means by which the company will achieve the SO_2 BACT limit in this case. The term "pre-combustion control," wherein wood and TDF are mixed in certain proportions prior to being fed into a boiler, is also referred to as "fuel blending." The term "in-situ

control," wherein acidic SO_2 generated in the course of burning TDF is neutralized by alkali wood ash, is also referred to as "wood ash neutralization." Under the permit, the pre-combustion and in-situ controls are relational in that the amount of wood ash neutralization deployed depends on the particular ratio of wood to TDF burned in the boiler. *See*, *e.g.*, Permit App. § 4.2.6.3, at 82. As mentioned in Part I.B above, Hillman Power's new PSD permit authorizes an increase in the TDF component of the plant's fuel blend (i.e., a change in the existing pre-combustion/in-situ SO_2 controls) from approximately six percent of the fuel blend (or 3,149 pounds TDF per hour) to approximately nine percent (or 5,000 pounds TDF per hour). *See* Permit cond. 1.4.

With regard to these pre-combustion/in-situ controls, MEC argues:

> The ability * * * of wood to neutralize [SO_2] emissions is very sensitive to the relative amounts of wood and TDF in the fuel. The increase in [SO_2] emissions as a function of percentage of TDF occurs in a very non-linear manner * * *. * * * With small amounts of TDF, there is no appreciable rise in SO_2 emissions. Up to the presently used value of 3,149 lbs/hr or roughly 6% TDF by weight, stack testing shows a slight increase in [SO_2] emissions. The proposed value (9% TDF by weight) would result in a very significant rise in the SO_2 emission rate.

MEC Pet'n at 10. MEC provides a chart indicating the relationship between TDF burn rate and SO_2 emissions rate, as follows:

Data Source	TDF Burn Rate	SO_2 Emissions Rate
1996 Stack Test	896 lbs/hr (10 tons of TDF/day)	0
CEMS Data 1998-2000	3,149 lbs/hr (37 tons of TDF/day	11.5 lbs SO_2/hr
1998 Stack Test	5,000 lbs/hr (proposed) (60 tons of TDF/day	50 lbs SO_2/hr

MEC Pet'n at 10. On these facts, MEC argues that "the emissions from the addition of TDF increase substantially as [the TDF burn] rate increases above 3,000 pounds per hour. Therefore, the fuel mix can only be considered pre-combustion control up to approximately 3,000 pounds per hour." MEC Pet'n at 11; *see also id*. ("[i]n-situ controls are clearly overwhelmed by the proposed [TDF burn] rate"). MEC concludes that MDEQ erred by not limiting the TDF firing rate to 3,149 pounds per hour, the previously permitted rate, because, MEC contends, that firing rate provides the maximum amount of SO_2 emissions control based on energy, environmental, and economic factors. *Id*.

In addressing MEC's argument, we note at the outset that BACT is an emission limitation, not a control technology. *See*, *e.g.*, *In re Three Mountain Power, L.L.C.*, PSD Appeal No. 01-05, slip op. at 23 (EAB May 30, 2001), 10 E.A.D. ___ (BACT means an emission limitation rather than a particular pollution control technology; "[t]he control technology is the means by which the BACT [limit] is achieved"); *In re Metcalf Energy Ctr.*, Order Denying Review, PSD Appeal Nos. 01-07 & 01-08, at 13-14 (EAB Aug. 10, 2001) ("[a]s the [CAA] makes clear, BACT is an emission limitation"), *appeal docketed*, No. 01-71611 (9th Cir. Oct. 8, 2001). The CAA and implementing regulations both define BACT as an emission limit, not a control technology. *See* CAA § 169(3), 42 U.S.C. § 7479(3); 40 C.F.R. § 52.21(b)(12).

As indicated in Hillman Power's BACT analysis, four other existing TDF-burning facilities have SO_2 BACT limits ranging from 0.045 lbs/MMBtu to 0.11 lbs/MMBtu. Permit App. tbl. 4-2, at 51. These facilities are able to achieve these low emissions limits because they have

installed post-combustion controls, such as wet scrubbers, to control their SO_2 emissions. *See id*. § 4.2.6.3, at 79-82. In this case, BACT for SO_2 emissions is 0.21 lbs/MMBtu (which is equivalent to 62.5 pounds of SO_2 per hour or 250 tons SO_2 per year, the permit limits for the first year, assuming Hillman facility operation at its design capacity of 300 MMBtu per hour).[13] Permit conds. 1.1e, .1g; Permit App. §§ 4.2.6.3, 4.2.7.1, at 91-92. Hillman Power's analysis indicates that BACT for the Hillman Power facility is higher than BACT for the four other TDF-burning facilities because, as mentioned in Part I.B above, economic considerations specific to Hillman Power purportedly rendered installation of scrubbers there cost-ineffective. *See* Permit App. § 4.2.6.3, at 79-82; *see also* Fact Sheet at 3-5. Notably, MEC has not challenged MDEQ's determination that post-combustion controls are not cost-effective at the Hillman Power facility. As a result, we do not reach that issue here.

It may be true, as MEC argues, that the control technology authorized by the permit -- in-situ control (wood ash neutralization) -- will be ineffective after a certain point: MDEQ itself acknowledges this fact. *See* RTC Doc. at 3 ("Stack test data indicate that at a feed rate above 896 pounds TDF per hour, the neutralization effect is negligible. The present permit allows a TDF usage rate of 3,149 pounds per hour[,] which exceeds the neutralization effect."); Fact Sheet at 5 ("The level of control associated with in-situ control is already being achieved at the Hillman Power Company facility. * * * Adding more TDF to the fuel mix as proposed by Hillman Power exceeds the neutralization capacity of the wood ash, resulting in the proposed increase in emissions of SO_2 and [sulfuric acid mist]."). Under the CAA, however, permittees such as Hillman Power have flexibility to implement various pollutant control technologies, methods, or techniques to achieve their BACT limits, as long as those BACT limits are achieved. Indeed, in some cases, as here, no add-on pollution controls may be employed, but as long as the BACT

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[13]After the first year, SO_2 BACT drops to 0.17 lbs/MMBtu, which is equivalent to 50 lbs SO_2 per hour or 200 tons SO_2 per 12-month rolling time period, assuming Hillman Power facility operation at its design capacity of 300 MMBtu per hour. Permit conds. 1.1i, .1k; *see* Permit App. § 4.2.6.3, at 91.

emission limits are attained by the facility, the permittee will be in compliance with the BACT component of the CAA.[14]

In contending the permitted TDF firing rate should not be changed from its current level of 3,149 pounds per hour, MEC left itself vulnerable to a technology-centered counter-argument raised by Hillman Power and MDEQ, namely, that MEC is impermissibly "redefining the source." *See* MDEQ Resp. at 7-8; HPC's MEC Resp. at 14-16. As the Board has explained, "'[r]edefining the source' is a term of art described in the NSR Manual. The Manual states that it is legitimate to look at inherently lower-polluting processes in the BACT analysis, but EPA has not generally required a source to change (i.e., redefine) its basic design." *In re Knauf Fiber Glass, GmbH*, 8 E.A.D. 121, 136 (EAB 1999) (citing NSR Manual at B.13). Specifically, the NSR Manual states:

> Historically, EPA has not considered the BACT requirement as a means to redefine the design of the source when considering available control alternatives. For example, applicants proposing to construct a coal-fired electric generator[] have not been required by EPA as part of a BACT analysis to consider building a natural gas-fired electric turbine although the turbine may be inherently less polluting per unit product (in this case electricity). However, this is an aspect of the PSD permitting process in which states have the discretion to engage in a broader analysis if they so desire. * * * [For example,] there may be instances where, in the permit authority's judgment, the consideration of alternative production processes is warranted and appropriate for consideration in the BACT analysis.

NSR Manual at B.13.

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[14]Again, we emphasize that MEC did not challenge MDEQ's determination that post-combustion SO_2 controls were not cost-effective, nor did MEC challenge the emission limits selected as BACT. MEC asked only that there be no increase in the permitted TDF burn rate.

In this case, limiting TDF burning to the amount authorized under Hillman Power's existing permit, as advocated by MEC, would necessarily operate to the exclusion of the process modification Hillman Power seeks; in this sense, Hillman Power and MDEQ argue that MEC is attempting to redefine the source. Although MDEQ clearly has discretion under EPA guidance to consider and even require such a restriction, it chose not to do so and instead determined to review the modification on its merits. In this regard, the Department reviewed and approved Hillman Power's BACT analysis and further concluded that the facility's increased SO_2 emissions from increased TDF firing -- controlled only by fuel blending/wood ash neutralization and not any post-combustion controls whatsoever -- would not exceed the NAAQS or PSD air increments for northern Michigan. *See infra* Part II.B.1. Accordingly, MDEQ authorized the requested modification. MEC has not challenged the NAAQS or increments analyses, nor has it challenged the SO_2 emission limit selected as BACT. Thus, MEC has not identified any clear error or other reason for us to grant review of MDEQ's decision on this issue. *See* 40 C.F.R. § 124.19(a). Review is denied on this ground.

B. *Dr. Richard Olree Petition*

Dr. Richard N. Olree, Jr., raises three issues in his petition for review. First, Dr. Olree argues that the PSD permit authorizes an "unjustifiable percentage" of increased stack emissions, particularly SO_2, as compared to tons of TDF burned. Second, Dr. Olree contends that MDEQ failed to address comments and data he presented regarding "the release of heavy metal fallout within the Hillman Area Grade School." Third, Dr. Olree claims MDEQ falsely stated that Hillman Power made significant improvements to the facility that would minimize emissions. We address each of these arguments in turn below.

1. *Disproportionate Increase in Stack Emissions versus TDF Firing Rate*

Dr. Olree begins by comparing the stack emissions at Hillman Power under the new PSD permit to prior permitted levels. He observes that the proposed increase in TDF firing rate to 5,000 pounds per hour

(from 3,149 pounds per hour) constitutes a 62.98 percent increase, and that total stack emissions will increase from 647.8 tons of criteria pollutants annually to 1,043.7 tons per year ("tpy"), also a 62 percent increase. Olree Pet'n at 1. Dr. Olree then contends that SO_2 emissions will increase 400 percent on an annual basis, escalating from 47.8 tpy to 250 tpy. *Id*. Citing an engineer's letter that projects a less-than-40-tpy increase in SO_2 emissions from a TDF burn rate of 3,712 pounds per hour (under certain conditions), Dr. Olree argues that "the permit should not have been granted for more than what is needed." *Id*. at 2 & Ex. 2. Dr. Olree concludes, "The total increase of stack emissions from the first start up of the plant (49.5 tons) that was designed to burn wood chips is up over 1400% (200 tons) total stack pollutants granted with this new permit. This is a classic example of a 'Sham permit granting system.'" *Id*. at 2.

MDEQ responds by pointing out that it acknowledged the absence of a one-to-one relationship between TDF firing rate and SO_2 emissions in its response to comments on the draft permit. MDEQ Resp. at 9. The Department quotes excerpts from its response to comments document as proof that it responded to Dr. Olree's concerns along these lines,[15] *id*. at 9-10 (quoting RTC Doc. at 8), and argues that the Board should deny review because Dr. Olree failed to identify any clear error in or other problem with MDEQ's BACT analysis. *Id*. at 10. Hillman Power also weighs in, seconding MDEQ's claim that the Department addressed Dr. Olree's concerns in the response to comments and asserting that the Board should deny review because Dr. Olree has simply repeated his objections on appeal rather than explaining why MDEQ's

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[15]In its response to Dr. Olree's comments on the draft permit, MDEQ wrote, among other things:

> This comment is based on the false expectation that there is a one-to-one correlation between the TDF usage rate and total SO_2 emissions. There is a neutralization effect from the presence in the exhaust gas of alkali ash from the combustion of wood. An exact correlation among the factors influencing this neutralization has not been determined.

RTC Doc. at 8.

response to those objections is clearly erroneous or otherwise warrants review. HPC's Olree Resp. at 11.

Although we appreciate Dr. Olree's concern regarding potential increases in SO_2 emissions,[16] his argument ultimately misapprehends how the PSD program operates. The PSD program does not prohibit all increases in air pollution, even seemingly large ones such as those presented here. Rather, as designed by Congress and implemented by EPA, the PSD program represents an effort to balance economic growth with environmental concerns. *See*, *e.g.*, CAA § 160(3), 42 U.S.C. § 7470(3) (purpose of PSD program is, among other things, "to insure that economic growth will occur in a manner consistent with the preservation of existing clean air resources"); NSR Manual at 5 (one basic goal of PSD regulations is "to ensure that economic growth will occur in harmony with the preservation of existing clean air resources").

In this regard, the PSD regulations state that emissions from a proposed source may not cause or contribute to a violation of either the NAAQS or the applicable PSD increments. 40 C.F.R. § 52.21(k). Compliance with this requirement is demonstrated through an analysis of ambient air quality near the facility in question. As we have explained in prior cases:

> An air quality analysis provides predictions of pollutant concentrations in ambient air by modeling the impacts of new emissions from a proposed source. The air quality analysis looks at two specific endpoints. First, the analysis must determine whether emissions from a proposed source will cause or contribute to a violation of NAAQS. NAAQS are maximum ambient air concentrations for certain pollutants that apply nationwide. * * * [NAAQS] are set at levels that the Administrator of EPA has determined are necessary to

[16]We need not determine whether the particular percentage increases cited by Dr. Olree are accurate but only assume them for the sake of argument.

> protect the public health and welfare. 40 C.F.R. § 50.2(b).
>
> Second, the analysis must calculate whether the proposed emissions will be within the applicable PSD increment. A PSD increment is the maximum allowable *increase* in pollutant concentration over a baseline concentration. *See* 40 C.F.R. § 52.21(c). The PSD increment concept was designed to accommodate economic growth and increased pollution associated with such growth while placing limits on new pollution. Significant deterioration is prevented if the amount of new pollution from the proposed source, in conjunction with pollution from certain existing sources, is less than the amount permitted by the PSD increment. *See* NSR Manual at C.3.

In re Knauf Fiber Glass, GmbH, 8 E.A.D. 121, 148 (EAB 1999); *see In re Haw. Elec. Light Co.*, 8 E.A.D. 66, 72-73 (EAB 1998).

In short, emissions increases attendant to industrial growth are permissible under the PSD program provided the increase will not exceed the NAAQS or the applicable PSD increments and provided the best available control technology (represented by an emission limit) is installed to control emissions. In this case, projected SO_2 emissions will neither exceed the NAAQS or the PSD increment,[17] *see*, *e.g.*, Fact Sheet at 8 (air quality impact analysis showing Hillman Power's SO_2 emissions will consume ten to fifty-one percent of Class II PSD increments); Permit App. § 5, at 100-110 (air quality impacts analysis), and, as we have already observed, the permit provides for BACT. Dr. Olree has made no showing of clear error or provided any other ground that would warrant review of this permit.[18] Review therefore must be denied on this basis.

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[17]Dr. Olree has not identified any data or other information or materials refuting the power plant's air quality analysis.

[18]With respect to Dr. Olree's argument that "the permit should not have been granted for more than what is needed," which is derived from an engineer's letter (continued...)

2. *Heavy Metals in Fly Ash*

Next, Dr. Olree raises concerns about MDEQ's analysis of heavy metals (e.g., arsenic, cadmium, chromium, lead, mercury, nickel) present in fly ash emitted by the Hillman Power facility. Dr. Olree contends that fly ash from the power plant has been found in the Hillman elementary school's air filters and that heavy metals consistent with plant emissions have been detected in soil samples collected from the children's playground at the school. Olree Pet'n at 2-3. Specifically, he mentions soil samples he and his son collected from the playground and sent to the University of Georgia for analysis; heavy metals were found in all samples. *See id*. at 3 & Ex. 6. Dr. Olree points out that the elementary school is immediately adjacent to the power plant and that, according to MDEQ wind drift charts, school grounds are subject to the highest levels of fallout from the power plant.[19] Dr. Olree is concerned that in issuing this PSD permit, MDEQ failed to adequately protect the health of vulnerable school children who attend Hillman elementary school, because, he argues, the Department allegedly overlooked the issue of heavy metals-containing fly ash in school air filters and on school grounds. *Id*. at 2-4.

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[18](...continued)
calculating less than 40 tpy additional SO_2 emissions from a TDF burn rate of 3,712 pounds per hour, *see* Olree Pet'n at 2 & Ex. 2, we must deny review. Dr. Olree does not indicate whether this issue was raised during the comment period on the draft permit, and our review of the portions of the administrative record in our possession failed to uncover it. The argument is not present in Dr. Olree's testimony at the hearing, or in MEC's or Ms. Baranyai's comments, and we are unaware of any other place the argument might have been raised before the MDEQ. Moreover, Dr. Olree makes no argument that the issue was not "reasonably ascertainable" during the public comment period. Thus, we will not pursue the issue further. *See*, *e.g.*, *In re Phelps Dodge Corp.*, NPDES Appeal No. 01-07, slip op. at 82 (EAB May 21, 2002), 10 E.A.D. ___ ("persons seeking review of a permit must demonstrate that any issues or arguments raised on appeal were previously raised during the public comment period on the draft permit, or were not reasonably ascertainable at that time") (citing 40 C.F.R. §§ 124.13, .19(a)).

[19]Dr. Olree notes in this regard that the Hillman school system has at least on one occasion in the past received reimbursement from Hillman Power to wash school buses. Dr. Olree posits that this is in response to "excessive fallout" from the power plant. Olree Pet'n at 3 & Ex. 7.

In response, MDEQ and Hillman Power each contend that the permit application and response to comments documents contain extensive analyses and discussion of heavy metals issues. *See* MDEQ Resp. at 10-12; HPC's Olree Resp. at 8-10. MDEQ notes that in the response to comments document, it "explained that it performed a detailed and conservative risk assessment to ensure that each toxic air pollutant emitted from the facility was below the relevant health-based screening level." MDEQ Resp. at 10-11 (citing RTC Doc. at 14). MDEQ also states that it evaluated the interactive effect of mixtures of toxic emissions and analyzed the impacts an increased TDF firing rate would have on concentrations of heavy metals in soils. *Id*. Furthermore, MDEQ asserts, without acknowledging whether it considered Dr. Olree's data as part of the permit review process itself, that "[t]he BACT analysis also demonstrates that the concentrations of heavy metals in the soil samples that Dr. Olree collected and sent to the University of Georgia for analysis are also well below the acceptable soil screening levels." *Id*. at 12 (citing Permit App. at 116-17). Hillman Power, for its part, argues that Dr. Olree's concerns about heavy metals should be rejected on the ground that heavy metals are non-PSD pollutants and as such are not subject to regulation under the PSD program. HPC's Olree Resp. at 6-8.

Under the procedural rules governing PSD permits, permitting agencies must "briefly describe and respond to all significant comments on the draft permit." 40 C.F.R. § 124.17(a)(2). In this instance, we can find no explicit mention in MDEQ's response to comments of Dr. Olree's soil sample data, which he presented to the Department at the public hearing on the draft permit. *See* Hearing Transcript at 20-22. However, the administrative record for this permit makes quite clear that MDEQ carefully considered the impacts that heavy metals emissions from the power plant would have on human health and the environment in the Hillman area. *See* RTC Doc. at 11-17; Fact Sheet at 5-7; Q&A Doc. at 3-8; *see also* Permit App. at 20-22, 68-69, 107-09, 116-19. Indeed, the record indicates that MDEQ addressed the fly ash, school proximity, and

children's health issues raised in Dr. Olree's hearing testimony.[20] *See* RTC Doc. at 12 (school proximity), 13-15 (children's health), 19-20 (fly ash); *see also* Q&A Doc. at 6 (children's health), 4 & 9 (fly ash). For example, with respect to the "fallout" or fly ash issue, MDEQ stated, among other things:

> The source of the problem cited in the comments is not clearly Hillman Power. As such, the concern presents insufficient basis for denial of the permit application. As an example, wood stoves or fireplaces can be a source of fly ash. Both the [MDEQ] complaint log and public hearing testimony indicate that there has been improvement concerning the fallout issue. [MDEQ] will continue to monitor this issue and respond to citizen concerns.

RTC Doc. at 19. As for children's health, MDEQ explained:

> It is important to realize that the EPA and/or [MDEQ] health-based limits[, with which the modified facility will comply,] are intended to protect people who are especially sensitive to the effects of the air contaminants prior to setting the limits. This includes children, seniors, people with asthma, people with heart and lung problems, people with allergies or diabetes, or other health problems.

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[20]While MDEQ might not have gone into the detail on each of these issues that Dr. Olree might have desired, the procedural rules governing PSD permits do not require permitting agencies to respond to each comment in an individualized manner. Rather, permitting agencies legitimately may group related comments together and provide one unified response. Moreover, the rules do not require a permit agency's response to be of the same length or level of detail as the comment. *In re NE Hub Partners, L.P.*, 7 E.A.D. 561, 582-84 (EAB 1998), *review denied sub nom. Penn Fuel Gas, Inc. v. U.S. EPA*, 185 F.3d 862 (3d Cir. 1999); *see In re Hoechst Celanese Corp.*, 2 E.A.D. 735, 739 n.7 (Adm'r 1989). In this case, we find that the heavy metals analysis MDEQ conducted was thorough enough to adequately encompass the issues raised by Dr. Olree.

Q&A Doc. at 6; *accord* RTC Doc. at 13-15. We find no clear error in MDEQ's treatment of these matters, and we do not think the Department's approach presents an important policy matter or abuse of discretion requiring Board review. Accordingly, review is denied on this ground.[21]

3. *Plant Upgrades*

Finally, Dr. Olree argues that Hillman Power attempted to satisfy the BACT requirement "by replacing [the] stack and by changing components of the plant." Olree Pet'n at 3-4. MDEQ contends that this characterization of the approach taken to satisfy BACT is "quite simply, false." MDEQ Resp. at 12. MDEQ explains that the BACT analysis did not evaluate stack replacement as an SO_2 pollution control alternative but rather examined wet and dry scrubbers, dry sorbent injection, and fuel blending/wood ash neutralization as the various means by which SO_2 emissions could be controlled. *Id*. Hillman Power agrees, noting that "[t]he facility upgrades discussed in the application and in the MDEQ response to comments were in regards to the concern about current and future fallout issues at the facility," HPC's Olree Resp. at 12, and that "[n]either [Hillman Power] nor MDEQ included [facility upgrades] in a discussion of BACT." *Id*.

Dr. Olree has failed to establish any clear error on MDEQ's part or other reason for us to grant review of the PSD permit on this ground. *See* 40 C.F.R. § 124.19(a). Therefore, review is denied.

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[21]We note that Dr. Olree's data indicating the presence of certain heavy metals associated with fly ash in soil samples at and around the school, and his reference to tests showing the presence in air filters, do not by themselves negate MDEQ's conclusion that the project is protective of public health. Data indicating the presence of certain contaminants are not necessarily incompatible with the conclusion that the levels at which such contaminants are identified are not cause for concern. Accordingly, at best such data are inconclusive in terms of public health significance.

C. *Ms. Donna Baranyai Petition*

Ms. Donna Baranyai raises two issues in her petition. First, she, like Dr. Olree, points out that fly ash consistent with that from the power plant has been found in furnace filters at Hillman elementary school. Baranyai Pet'n at 1. She also cites the soil sample results that Dr. Olree received from the University of Georgia, which indicate that heavy metals are present in the Hillman elementary school playground's soils. *Id*. As discussed previously in response to Dr. Olree's concerns, the Department addressed heavy metals, children's health, and school proximity issues in its review of this PSD permit application and concluded that children, adults, and the environment would be adequately protected by the terms of this permit. *See supra* Part II.B.2. Ms. Baranyai's petition fails to identify a clear error of fact or law committed by MDEQ in the course of approving the permit or any other reason that would justify further review of this permit. Accordingly, her petition is denied on this ground.

Ms. Baranyai's second argument pertains to Hillman Power's compliance with General Condition No. 6 of its PSD permit. Baranyai Pet'n at 1. General Condition No. 6 states:

> Operation of this equipment shall not result in the emission of an air contaminant [that] causes injurious effects to human health or safety, animal life, plant life of significant economic value, or property, or [that] causes unreasonable interference with the comfortable enjoyment of life and property.

Permit cond. 6. This permit condition is a paraphrase of a State of Michigan air pollution control rule, found in Michigan's administrative code. *See* Mich. Admin. Code r. 336.1901 (2001). That rule, and the permit condition itself, essentially prohibit emissions that cause a public nuisance. This is a state-specific issue that is not subject to regulation under the federal PSD program. *See*, *e.g.*, *In re Zion Energy, L.L.C.*, PSD Appeal No. 01-01, slip op. at 9 (EAB Mar. 27, 2001), 9 E.A.D. ___ (state noise regulations are not requirements of the federal PSD program); *In re Knauf Fiber Glass, GmbH*, 8 E.A.D. 121, 165-68, 171

(EAB 1999) (landfill disposal practices and state environmental quality review are governed by state law and administered by a state agency; they are not requirements of the federal PSD program). Therefore, review must be denied on this ground.

III. *CONCLUSION*

For the foregoing reasons, the petitions for review of Hillman Power's PSD Permit No. 687-86G are denied. In accordance with 40 C.F.R. § 124.19(f)(2), the Regional Administrator of EPA Region V, or his delegate, shall promptly publish in the *Federal Register* a notice of this final agency action.

So ordered.